

REMARKS

Claims 1-5 and 9-20 are pending in the present application. Claims 6-8 and 21-22 were previously canceled. Applicant respectfully requests reconsideration of the final rejection.

Claims 1-5, 9-11, 13, 14 and 16-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Singh, *et al.* (U.S. Patent No. 6,479,820, hereinafter “Singh”) in view of Hyon (U.S. Patent Application Publication No. 2004/0072108, hereinafter “Hyon”) and Chao, *et al.* (U.S. Patent No. 5,696,174, hereinafter “Chao”). Applicant respectfully traverses this rejection.

Both independent claims, 1 and 16, recite that "the cationic surfactant is tetradecyltrimethylammonium bromide (TTAB)." As discussed in the previous amendment, neither Singh nor Hyon discloses the use of tetradecyltrimethylammonium (TTAB) at all and in any case not for use as a cationic surfactant in processes as defined in claims 1 and 16 of the present invention. This view is not contested by the Examiner. However, the Examiner alleges that it would have been obvious for one of ordinary skill in the art to use TTAB as the cationic surfactant, because TTAB is known from Chao.

In contrast thereto, Applicant respectfully submits that a person skilled in the art would not be motivated to use the Chao reference, because it relates to a totally **different technical field** than the present invention and, secondly, TTAB in the present invention is used to achieve a totally **different technical objective** than in Chao.

Chao relates according to the abstract to a “*stable and water-resistant aqueous foam composition containing (1) a long chain cationic organic compound and (2) a long-chain anionic organic compound.... The stable foam composition of the invention may*

be... used in applications ... such applications include cementitious or gypsum containing substances, adhesives, binders, paper treating materials, coatings, ceramics, landfills, geofills, and firefighting and fireproofing materials.” Among others, TTAB is disclosed as a cationic organic compound (see col. 3, lines 50 and 51). Chao relates to *“foam compositions with excellent stability and water resistance”* (col. 2, line 67 to col. 3, line 1). In other words, the technical objective of the TTAB is to contribute to **stability and water resistance**.

In contrast thereto, the **present invention** relates to the field of patterned resist masks for **semiconductor substrates**. It has to be pointed out clearly that the technical field to which the present invention relates is totally different to the technical field of the Chao reference. Chao is directed to **aqueous foam compositions** used for cementitious or gypsum containing substances, adhesives, binders, paper treating materials, coatings, ceramics, landfills, geofills, and firefighting and fireproofing materials. A person skilled in the art in the field of semiconductors would never search or consider prior art in the field of aqueous foam compositions due to the clear and significant chemical and physical **differences of foam compositions** on the one hand and **semiconductors** on the other hand. Therefore, the skilled artisan would not expect that a piece of prior art in the field of aqueous foams would in any way be helpful for solving problems in the field of semiconductors.

Furthermore, the technical objective to TTAB used in Chao is totally different from the technical object of TTAB of the present invention. According to Chao TTAB contributes to provide foam compositions with excellent stability and water resistance. In contrast thereto, the technical objective achieved with TTAB in the present invention

is totally different: *“the use of cationic surfactants makes it possible, for a given thickness of the photoresist film to significantly reduce the line width at which a line collapse is observed. ... This makes it possible to reduce the line width of the webs without at the same time having to reduce the thickness of the photoresist layer. Therefore, thicker resist layers can be used even for a reduced line width, since the stability of the patterned resist with respect to a plasma suffices for transfer of the desired structure into the semiconductor substrate even in the case of a reduced critical feature size. The use of complicated multilayer resist systems or hard mask systems can therefore be avoided or delayed until it is necessary to pattern even smaller linewidths”* (specification of the present invention, page 6, paragraph [0013]). This technical objective of the TTAB in the present invention has nothing to do with the stability and water resistance of the Chao references to which TTAB in this reference contributes.

Summing up, due to the above discussed differences between the use of TTAB according to the present invention and Chao, *et al.*, a person skilled in the art faced with problems in the field of semiconductors would not consider the Chao reference since he/she would not expect to gather helpful information from it. Consequently, one of ordinary skill would **not combine** Chao with Singh and Hyon. Such a combination is an inadmissible *ex post facto* analysis in the knowledge of the present invention.

In view of the above, Applicant respectfully submits that this response complies with 37 C.F.R. § 1.116. Applicant further submits that the claims are in condition for allowance. No new matter has been added by this amendment. If the Examiner should have any questions, please contact Applicant's attorney at the number listed below. The Commissioner is hereby authorized to charge any fees that are due, or credit any overpayment, to Deposit Account No. 50-1065.

Respectfully submitted,

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Date

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